Claims

1. A method for the characterization of an HDAC inhibitor or a potential HDAC inhibitor comprising
   determining in a sample the amount of a molecular marker
   wherein the sample is derived from cells which have been treated with said HDAC inhibitor or potential HDAC inhibitor.

2. A method according to claim 1 wherein the molecular marker is selected from the group consisting of HDAC-2 RNA, HDAC-2 protein, Ubc8 RNA, UBC8 protein, RLIM RNA, RLIM protein, TRAIL RNA and TRAIL protein.

3. A method according to claim 1 or 2 wherein the sample is derived from tissue affected by a disorder.

4. A method according to claim 3 wherein the disorder is selected from but not restricted to the group consisting of skin cancer, melanoma, estrogen receptor-dependent and independent breast cancer, ovarian cancer, prostate cancer, renal cancer, colon and colorectal cancer, pancreatic cancer, head and neck cancer, small cell and non-small cell lung carcinoma, leukemias and other types of blood cell cancer and endocrine disease based on aberrant recruitment of histone deacetylase such as thyroid resistance syndrome.

5. A method according to anyone of claims 1 to 4 wherein the molecular marker is a ribonucleic acid and the amount of the molecular marker is determined by RT-PCR.

6. A method according to anyone of claims 1 to 4 wherein the molecular marker is a protein and the amount of the molecular marker is determined by use of an antibody directed against the molecular marker.

7. A method according to claim 6 wherein the amount of molecular marker is determined by Western Blotting, ELISA, immunohistochemistry and/or flow cytometry.

8. A method according to anyone of claims 1 to 7 further comprising the step of selecting the inhibitor if it has the activity of modulating the expression of the molecular marker.

9. A method according to anyone of claims 1 to 8 further comprising the step of determining in a reference sample the amount of said molecular marker wherein the reference sample is derived from cells which have not been treated with said HDAC inhibitor or potential HDAC inhibitor.

10. The use of a means for determining the amount of a molecular marker for profiling of HDAC inhibitors or potential HDAC inhibitors.

11. The use of a means for determining the amount of a molecular marker for diagnosing a disease.

12. The use of a means for determining the amount of a molecular marker for determining whether a treatment of a disorder with an HDAC inhibitor is to be started/continued or not.

13. The use of a means for determining the amount of a molecular marker for determining whether a treatment of a disorder with a therapy that targets a molecular marker is to be started/continued or not.

14. The use according to any one of claims 10 to 13 wherein the means for determining the amount of a molecular marker is an antibody directed against a protein selected from the group consisting of HDAC-2 protein, UBC8 protein, RLIM protein and TRAIL protein.

15. The use according to any one of claims 10 to 13 wherein the means for determining the amount of a molecular marker is an oligonucleotide capable of hybridizing to a polynucleotide selected from the group consisting of RLIM mRNA, RLIM cDNA, Ubc8 mRNA, Ubc8 cDNA, TRAIL mRNA, TRAIL cDNA, HDAC-2 mRNA, HDAC-2 cDNA and complements thereof.

16. The use according to claim 15 wherein the oligonucleotide is used as a primer in a polymerase chain reaction or in a RT-PCR.

17. The use according to claim 15 wherein the oligonucleotide is used as a probe in a hybridization reaction.

18. A diagnostic kit containing
(i) means for determining the amount of a molecular marker and
(ii) an HDAC inhibitor.

19. A diagnostic kit according to claim 18 wherein the means for determining the amount of a molecular marker is an antibody directed against a protein selected from the group consisting of HDAC-2 protein, UBC8 protein, RLIM protein and TRAIL protein.

20. A diagnostic kit according to claim 18 wherein the means for determining the amount of a molecular marker is an oligonucleotide capable of hybridizing to a polynucleotide selected from the group consisting of RLIM mRNA, RLIM cDNA, Ubc8 mRNA, Ubc8 cDNA, TRAIL mRNA, TRAIL cDNA, HDAC-2 mRNA, HDAC-2 cDNA and complements thereof.